AI Data Centers: What North Dakota Needs to Know

A plain-language guide to the facts behind the headlines

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August 2026

Why we wrote this

Artificial intelligence has set off the biggest wave of data center construction in history, and North Dakota is squarely in the middle of it. Our legislature is holding hearings, developers are knocking, and in July 2026, New York became the first state to hit the brakes, pausing new large data center construction for a year while it sorts out the rules.[1]

That makes this a good moment to separate fact from fear. A lot of what gets said at public hearings is true. Some of it isn't. And some of the loudest worries turn out to depend entirely on how a project is built. This guide walks through the concerns we hear most often, the electric bill, the water, the noise, and lays out what the evidence actually shows. Then it turns to what North Dakota stands to gain, because the benefits are real and they're unusually large for a state our size. The goal isn't to cheerlead or to alarm. It's to give North Dakotans and their legislators an honest, sourced picture so we can make good decisions.

First, there are two very different kinds of data centers

Most of the confusion in the public debate comes from lumping two very different things under one name. Getting this distinction clear settles half the argument before it starts.

- **Grid-connected data centers** draw their power from the local utility, the same grid that serves your home. They typically run from about 100 megawatts up to one gigawatt. Because they pull electricity from the shared grid, these are the projects where questions about electric rates and grid strain are relevant.[2]

- **Hyperscale, behind-the-meter facilities** are the giants. They are multiple gigawatts, and they're so large that no ordinary grid can serve them. So they build and run their own power plants on-site, usually using natural gas, sometimes nuclear. Because they

generate their own electricity, they typically don't touch your monthly bill at all.[3,4]

To put the difference in perspective, it is useful to think about these numbers in terms of how much electricity we already use. Roughly speaking, 100 megawatts is about the electric demand of the Jamestown area. A gigawatt is roughly the electric demand of the entire Fargo area. Five gigawatts is more electricity than the whole state of North Dakota uses today.[5,6] When you hear a number, ask which kind of facility it describes. The answer usually tells you whether the rate and grid worry even applies.

> ***When someone raises the electric-bill question, the first thing to ask is simple: is this a grid-connected project, or does it bring its own power?***

Will my electric bill go up?

This is the worry we hear most, and the honest answer is reassuring: the best evidence says typically no. The largest hyperscale projects bring their own power, so they don't lean on your grid in the first place. And even for the grid-connected kind, the research points the opposite direction from the fear.

A 2026 Electric Power Research Institute (EPRI) study by Watten, Bistline, and Blanford asked the careful version of this question. Rather than just noting that data centers and low prices tend to show up together, the authors used an econometric method to establish cause and effect. They found that data center growth pushed average residential electricity rates down by roughly 6% from 2019 to 2024.[7] The reason is basic economics: a big, steady new customer spreads the grid's high fixed costs across more kilowatt-hours, which lowers the average cost everyone pays. The same study found no sign that costs were being shifted onto households to benefit the data centers.[8]

Two other 2026 studies add useful nuance. Energy and Environmental Economics (E3), in a study funded by the industry but independently authored, concluded that rising bills are driven by many things at once, such as inflation, natural gas prices, grid hardening costs, and market design, with data center load just one factor among many. It also noted that the states with the fastest load growth, Texas and Virginia, have seen some of the smallest rate increases, and found no evidence of a historical cost shift onto residential customers in Virginia, the largest data center market in the country.[9] A

Columbia University review struck a similar, careful note: whether new load raises or lowers rates depends heavily on how the grid is planned and how costs are allocated, not on the size of the data center.[10]

We don't have to look far to see both outcomes. In Williston, the Atlas Power project connected to a grid that didn't have spare capacity, so the extra transmission costs landed on local ratepayers as higher bills and the community turned against it.[11] In Ellendale, Applied Digital did the opposite. It bought "stranded" wind power electricity our wind farms were generating, but the transmission lines couldn't carry; that would otherwise have been wasted. That purchase helped cut local electricity rates by about $5 million in 2023, even as the facility pulled roughly 180 megawatts from the grid.[12] Some hyperscale data centers that generate their own electricity, like Microsoft's data center in Black Hills, Wyoming, are designed to sell their excess to the local grid during times of high demand, potentially improving reliability and lowering costs to consumers.[13]

> ***Whether a data center raises or lowers your bill comes down to the power plan, not the data center itself.***

One honest caveat: the EPRI findings describe a period of relatively modest buildout. The authors caution that the very largest new facilities, if they outrun the grid's ability to add cheap capacity, could behave differently. That's not a reason to panic. It's a reason to insist that each project shows a credible power plan before it's approved.

Will they drain our water?

Not if they're built with the right cooling design. Water use isn't baked into what a data center is. It's a choice about how to cool the equipment, and the low-water options are proven technology.

Some older or hotter climate facilities use evaporative cooling, which can consume a lot of water. But two alternatives avoid that almost entirely. Air cooling uses very little water. When Microsoft built in Goodyear, Arizona, the city made air cooling a condition of approval.[14] Closed-loop water systems fill their cooling circuit once and recycle it, losing almost nothing. Right here in Ellendale, Applied Digital's closed-loop facility reports using less water than a single-family home.[15]

For a state where water often means water for crops, the takeaway is practical: this is a solvable problem, and the solution can be in the permit. We can ask developers to state their cooling design and their total water draw up front, in writing, before anything is approved.

How loud are they, really?

"Loud" is in the ear of the listener, so let's use numbers and everyday comparisons instead. The noise comes from cooling fans and equipment that run around the clock. How much of it reaches a home depends almost entirely on distance.[16]

- Right next to the equipment, it's roughly the sound of standing beside a running lawn mower.[17]
- At homes a few hundred feet away, measured at real sites in Northern Virginia, it runs about 55 to 60 decibels, like a central air-conditioning condenser running in your yard, except it never cycles off.[18]
- At about 800 feet, the distance Atlas Power chose in Williston, it's roughly 50 to 55 decibels. That's only a refrigerator's hum, but against a rural nighttime background of 30 to 35 decibels, it stands out sharply. That contrast is exactly why the neighbors sued.[19,20]
- At a half mile or more, it's down around 40 decibels or less, quiet library territory, and usually lost in the wind and ordinary background sound.[21]

> ***Sound falls off fast with distance, so adequate setback turns noise from a real problem into a non-issue.***

Williston's mistake wasn't the technology. It was putting the equipment 800 feet from homes in a place where the nights are genuinely quiet. Good siting fixes this.

What North Dakota stands to gain

Now the other side of the ledger, and it's a big one. These are among the largest private capital projects in the world. To see the scale, look at Louisiana, where Meta's Richland Parish project has grown from an initial $10 billion to more than $50 billion, with roughly 7,500 construction jobs at peak, about 1,000 permanent jobs, and paying for over $1 billion in local infrastructure.[22]

North Dakota is already in this conversation: two trillion-dollar companies have each weighed projects in our state that could run up to $125 billion, building their own power on-site.[23] If both projects are built, that's a quarter of a trillion dollars invested in our state of 800,000 people.

Projects like these broaden the local tax base without the population boom that strains schools and roads. North Dakota already offers a sales tax exemption on data center equipment to help compete for them.[24] But the real reason we're built for this is energy, and here North Dakota holds a card almost no other state can play. We can serve both kinds of data centers, each with a different homegrown resource.

For grid-connected centers, our wind is the draw. When wind farms generate more than the transmission lines can carry, that "stranded" power is wasted. A data center can use it, and as Ellendale showed, that can lower rates for everyone else on the system.[25]

For the hyperscale, self-powered giants, our Bakken natural gas is the draw, and this is where two North Dakota problems solve each other. As our oil wells mature, they produce more and more gas relative to oil; the statewide gas-to-oil ratio recently hit record highs and keeps climbing. The pipelines that carry that gas to market are filling up. When there's no room left to move the gas, producers can be forced to cut back oil production itself, and that means lost jobs and lost tax revenue for the state.[26] A hyperscale data center is a giant, always-on customer for that gas. It turns a disposal headache into a revenue stream and protects the oil production the state depends on. New pipeline projects like the proposed Bakken East line already count data centers among the customers driving demand.[27]

Our oil producers need somewhere for their natural gas to go, and hyperscale data centers need natural gas to make electricity. Those two problems can solve each other.

Adding it up, abundant wind and gas, wide-open land far from neighborhoods, a cold climate that cuts cooling costs, and a business-friendly permitting environment, few states can match what North Dakota offers this industry.

This is also a national security question

AI leadership has become a strategic contest with China, and data centers are the

physical arsenal: no computing capacity, no frontier AI. The catch is that these systems need power 24 hours a day, every day. Wind and solar alone can't guarantee that around the clock; natural gas and nuclear can. North Dakota has the gas, in surplus.

North Dakota's own Doug Burgum put it bluntly at his confirmation hearing to lead the Interior Department: ***"Without baseload, we're going to lose the AI arms race to China."*** [28] The United States currently hosts about 54% of the world's hyperscale capacity, and holding that lead means having somewhere to build.[29]

This is worth remembering when a state slams the door. When New York paused construction, the demand didn't disappear; it started looking for a new home. As the head of New York's construction trades put it, those projects will go ***"permanently to Virginia, Texas, Georgia, and other states actively competing for these investments."*** [30] A state that can host this infrastructure responsibly is doing the country a service and capturing the benefit at the same time.

Good project or bad project: the questions to ask

Nearly every problem in this guide traces back to how a project is planned, not to data centers as a category. The contrast between Williston and Ellendale is really a checklist in disguise. Before a project breaks ground, residents and officials can ask:[31]

- ***Is it sited well away from homes, with setbacks measured in thousands of feet, not hundreds?***
- ***Is the power plan verified, stranded wind, self-generated power, or developer-funded grid upgrades so that it won't push costs onto ratepayers?***
- ***Does it use air or closed-loop water cooling, with the water draw stated in the permit?***
- ***Did the developer engage with the community before breaking ground?***

A project that answers those four questions well tends to become an Ellendale. One that skips them tends to become a Williston.

The bottom line

Banning data centers guarantees no problems, but it also guarantees no benefits, and it sends the jobs, the tax base, and the strategic infrastructure to other states. A free-for-all

isn't the answer either; that's how Williston happened. The path between them is the one Ellendale already tested: appropriate siting, verified power, low water use, and real community engagement.

Misinformation invites bad policy. Bad planning invites more Willistons. Good information and good planning together can let North Dakota capture an enormous opportunity while protecting the communities that host it.

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